Electronic Supplementary Information

Effective Luminescence Sensing of Fe^{3+}, $Cr_2O_7^{2-}$, MnO_4^- and 4-nitrophenol by A New Topology Type of Lanthanide Metal-organic Frameworks

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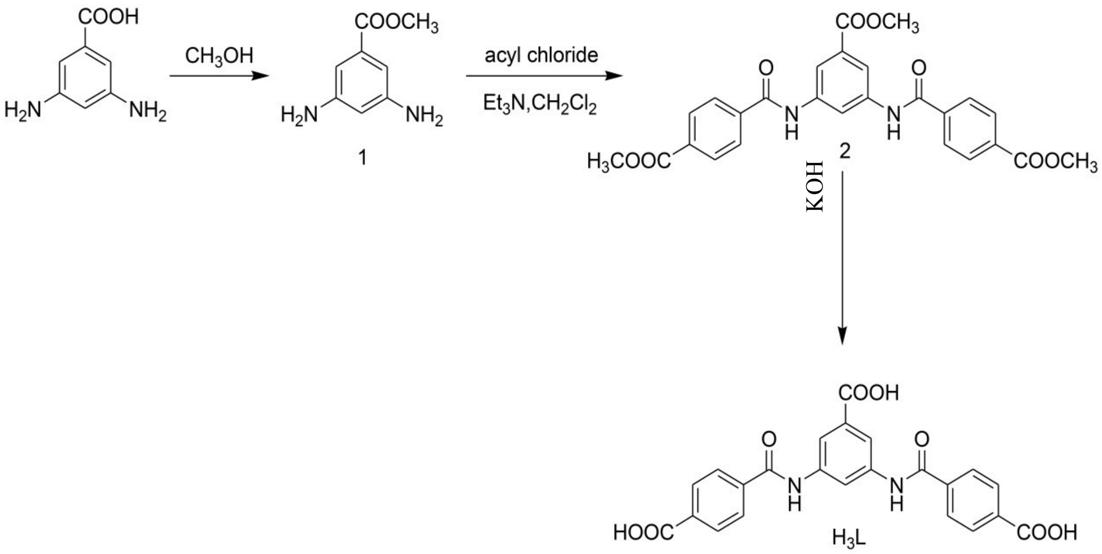
Synthesis of isomer of 4, 4`-(((5-carboxy-1,3-phenylene)bis(azanediyl))bis(carbonyl))dibenzoic acid (H_3L)



Scheme S1. Synthetic procedure for H_3L.

Methyl 3, 5-diaminobenzoate (1).

Under ice-cooling conditions, 1.52g (10mmol) of 3, 5-diaminobenzoicacid was dissolved in 20 mL of a 10% concentrated sulfuric acid-methanol solution, and stirred for 5 min. Reflow at 90°C for 32h. Solvent was removed under reduced pressure, the residue was dissolved in ethyl acetate (60mL) and washed with saturated bicarbonate (3×100mL), and the solvent was removed under reduced pressure to give the desired product **1** as a brown powder (0.82g, 49.4%). ^{1}H NMR (chloroform-d, 400 MHz, ppm) : δ 6.78 (s, 2H), 6.19 (s, 1H), 4.31 (s, 4H), 3.88 (s, 3H) (**Fig. S25**). ESI-MS: m/z =167.0 $[M + H]^+$ (**Fig. S26**).

Dimethyl 4, 4`-(((5-methoxycarbonyl)-1,3-phenylene)bis(azanediyl))bis(carbonyl)) dibenzoate (2).

Under ice-cooling conditions, 0.993g (5mmol) of methyl 4-(chlorocarbonyl) benzoate was dissolved in 20 mL of dichloromethane, and 0.415g (2.5mmol) of methyl 3, 5-diaminobenzoate was added. After stirring for 15 min, 0.75 mL of triethylamine was added dropwise and refluxed at room temperature for 32h. Solvent was removed under reduced pressure, the residue was washed sequentially by (water, saturated sodium bicarbonate, water), and it was naturally dried to give the product **2** as a brown powder (0.41g, 33.5%). ^{1}H NMR (DMSO-d$_6$, 400 MHz, ppm) : δ8.70 (s, 1H),8.19 (d, 4H), 8.12 (d, 4H), 8.10 (s, 2H), 7.95(s, 2H), 3.91 (s, 9H) (**Fig. S27**). ESI-MS: m/z= 491.4 $[M + H]^+$ (**Fig. S28**).

The isomer of 4, 4`-(((5-carboxy-1, 3-phenylene)bis(azanediyl))bis(carbonyl)) dibenzoic acid (H_3L).

2 (0.41g, 0.84mmol) was dissolved in methanol (80mL) being clear orange solution. Aqueous solution of KOH (0.234g, 2mL) was added into the above mixture, heating at 85°C for 5h. After cooling to room temperature, solvent was removed under reduced pressure to give orange solid. The solid were dissolved into water (40mL). Dilute hydrochloric acid was added dropwise to the aqueous with stirring. Lots of yellow particles appeared when the pH value of the solution is about 3. Brown solid H_3L (0.312g, 83.0%) was obtained by filtration. ^1H NMR (DMSO-d_6, 400 MHz, ppm): δ 10.59 (s, 3H), 8.62 (s, 1H), 8.14 (s, 2H), 8.06 (d, 4H), 8.04 (d, 4H), 7.99 (s, 2H) (**Fig. S29**). ESI-MS: m/z = 449.4 $[M + H]^+$ (**Fig. S30**).

Table S1. Crystal data and structure refinements for **1**

CCDC	1904075
Empirical formula	$C_{70}H_{94}Eu_2N_{10}O_{29}$
Formula weight	1843.47
Temperature/K	100.0(1)
Crystal system	triclinic
Space group	*P*-1
a/Å	9.75350(10)
b/Å	14.4803(2)
c/Å	15.2219(2)
α/°	87.2780(10)
β/°	72.0030(10)
γ/°	71.3950(10)
V/Å^3	1934.69(4)
Z	1
pcalcg/cm^3	1.582
μ/mm	12.245
F(000)	942.0
Crystal size/mm^3	0.25 × 0.16 × 0.15
Radiation Cu Kα	(*λ* = 1.54184)
2Θ range for data collection/°	6.114 to 149.064
Index ranges	$-12 \le h \le 12$, $-18 \le k \le 18$, $-18 \le 1 \le 18$
Reflections collected	71823
Independent reflections	7793 [R_{int} = 0.0520, R_{sigma} = 0.0254]
Data/restraints/parameters	7793/89/624
Goodness-of-fit on F^2	1.090
Final *R* indexes [I>=2σ (I)]	R_1 = 0.0426, wR_2 = 0.1163
Final *R* indexes [all data]	R_1 = 0.0434, wR_2 = 0.1171

Largest diff. peak/hole / e Å^{-3} 1.96/-1.56

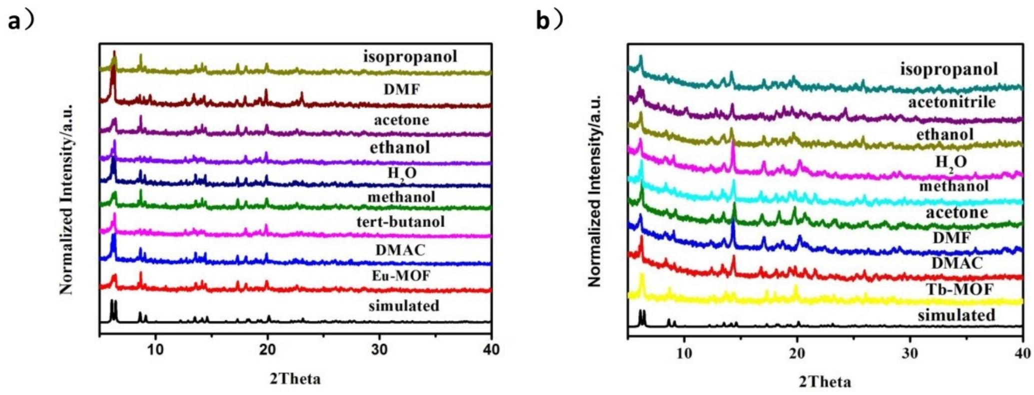


Fig.S1 (a) PXRD patterns of complexe**1** in different solvents. (b) PXRD patterns of complexe**2** in different solvents.

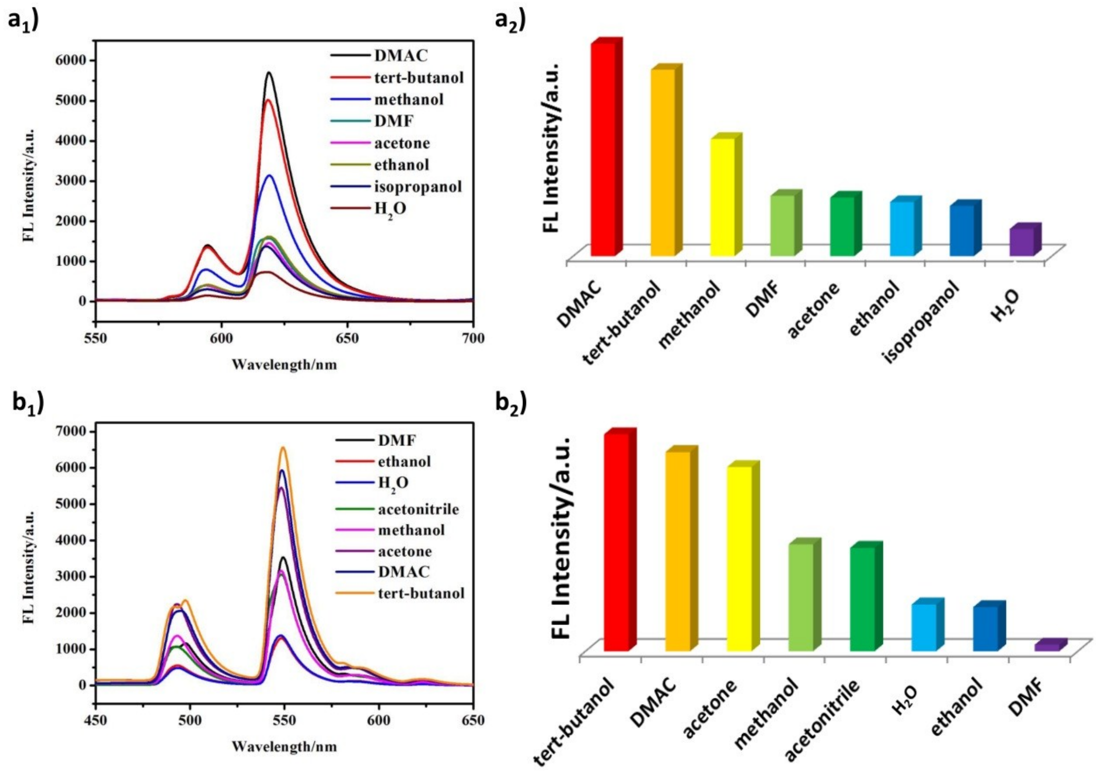


Fig.S2 (a) Luminescence intensity at 619nm of complexe**1** in different solvents.(b)Luminescence intensity at 548nm of complexe**2** in different solvents.

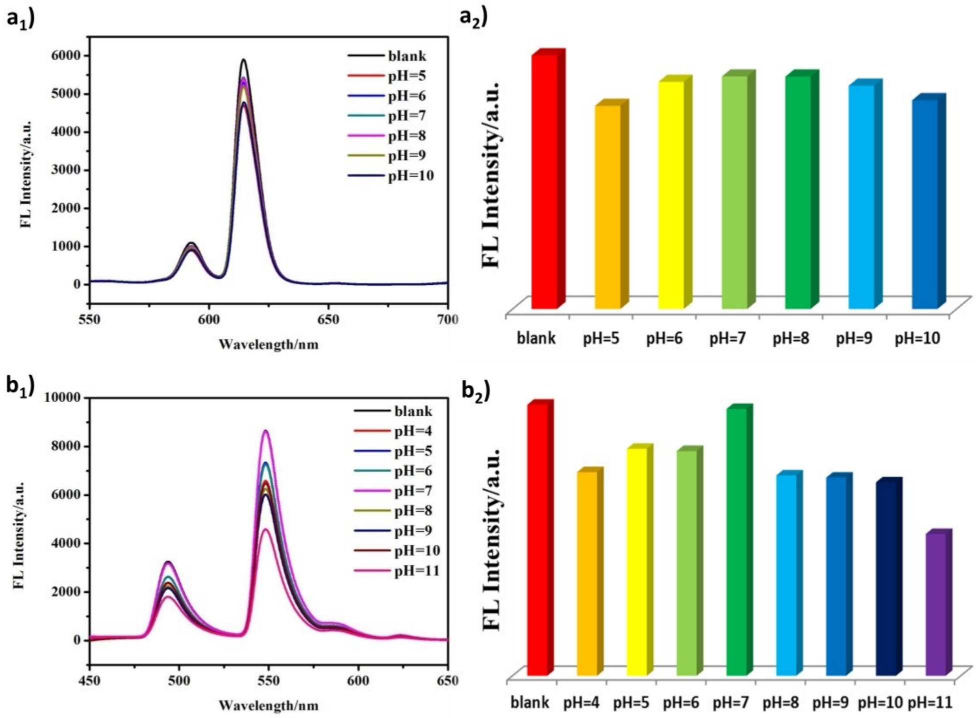


Fig.S3 (a) Luminescence intensity at 619nm of complexe**1** in different pH aqueous solutions. (b) Luminescence intensity at 548nm of complexe**2** in different pH aqueous solutions.

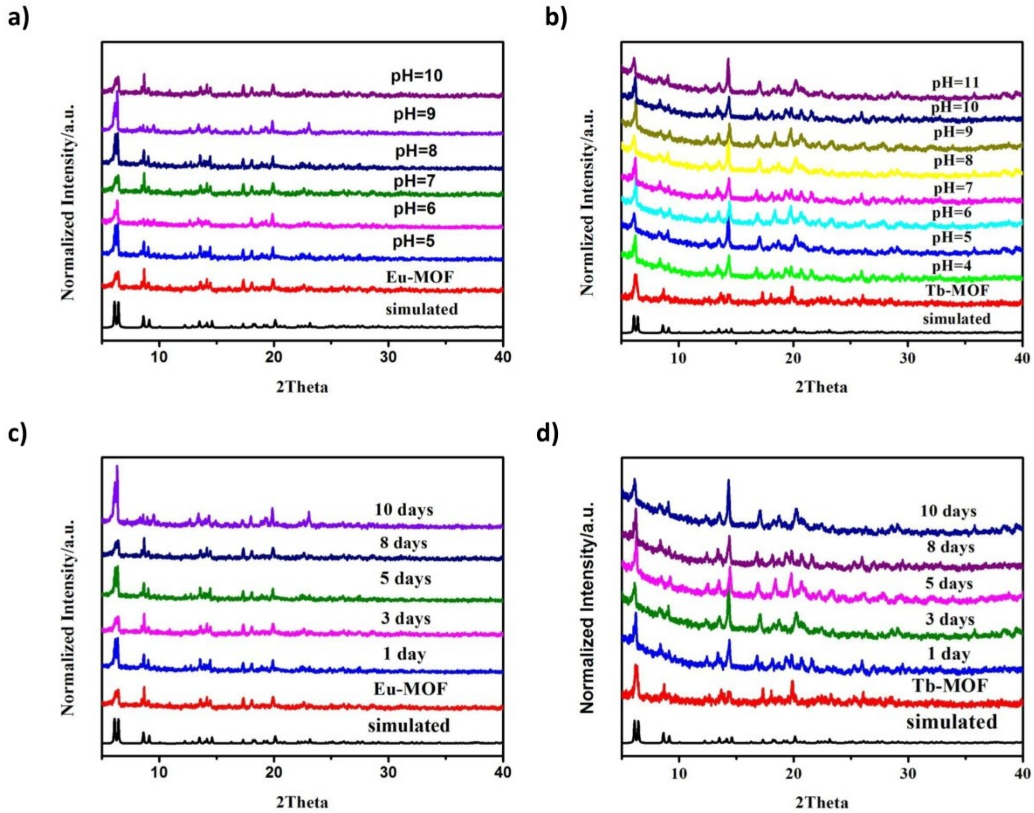


Fig.S4 (a) PXRD patterns of complexe**1** in different pH aqueous solvents. (b) PXRD patterns of complexe**2** in different pH aqueous solvents. (c) Complexe**1** was placed in water for different days of PXRD patterns. (d) Complexe**2** was placed in water for different days of PXRD patterns.

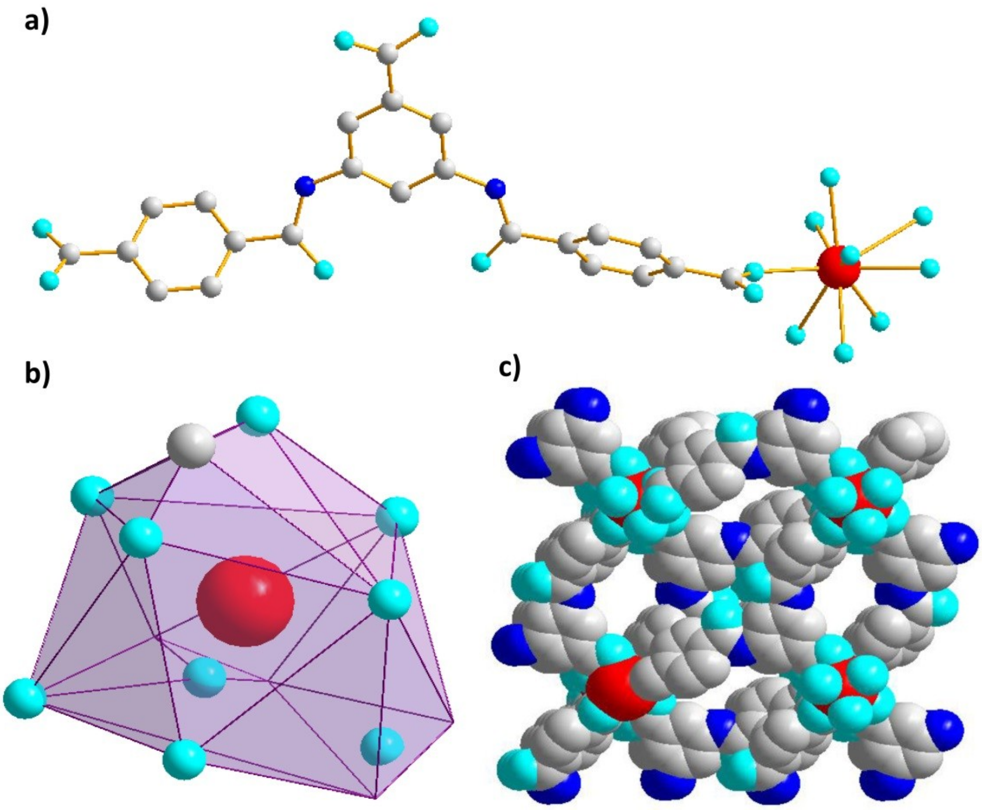


Fig.S5 (a) The asymmetric unit of complexe**1**. All hydrogen atoms and solvent molecules are omitted. (b) Coordination polyhedrons of Eu^{3+} ions. (c) 3D framework shown in space-filling mode along the a-axis.

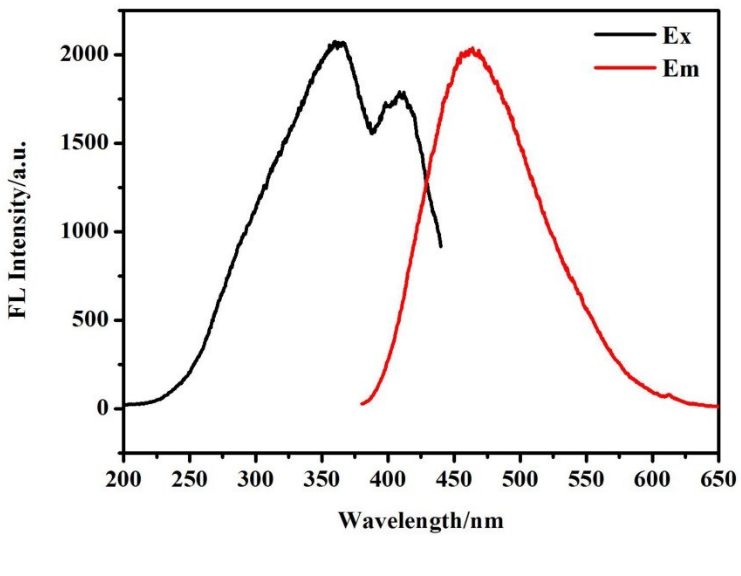


Fig.S6 Solid-state excitation and emission spectra of $\mathbf{H_3L}$ at room temperature (λ_{ex} = 353nm).

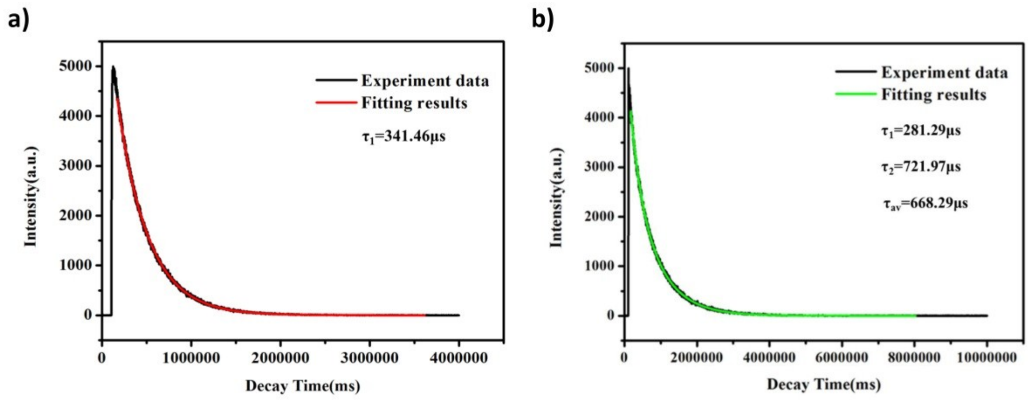


Fig.S7 (a) Decay time of complexe**1**. (b) Decay time of complexe**2**.

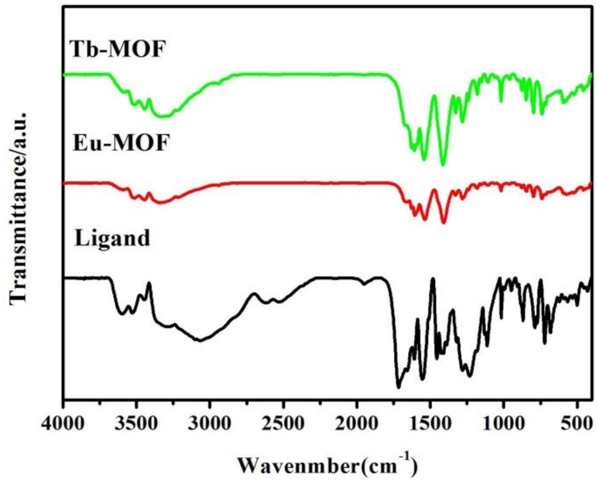


Fig.S8 IR spectrum of complexes **1-2** and ligand.

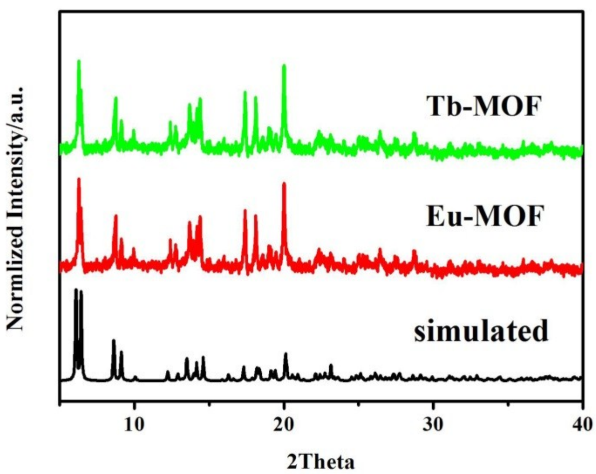


Fig.S9 PXRD patterns of complexes**1-2**.

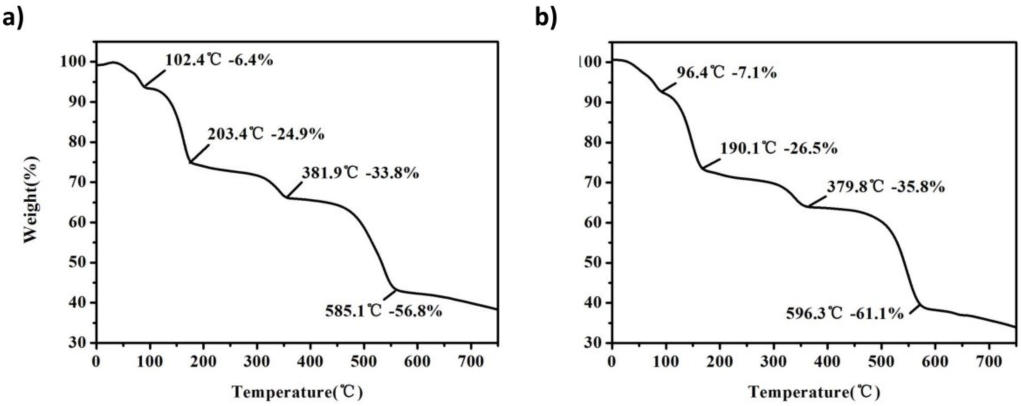


Fig.S10 (a) TGA curve of complexe**1**. (b) TGA curve of complexe**2**.

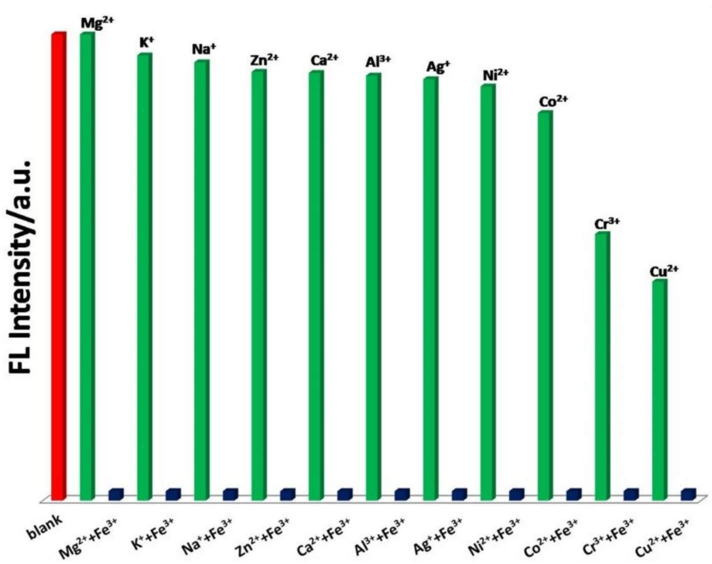


Fig.S11 Luminescence intensity of the complexe**1** dispersed in aqueous solution in the presence of different cations (green) or a mixture of other cations with Fe^{3+} (blue).

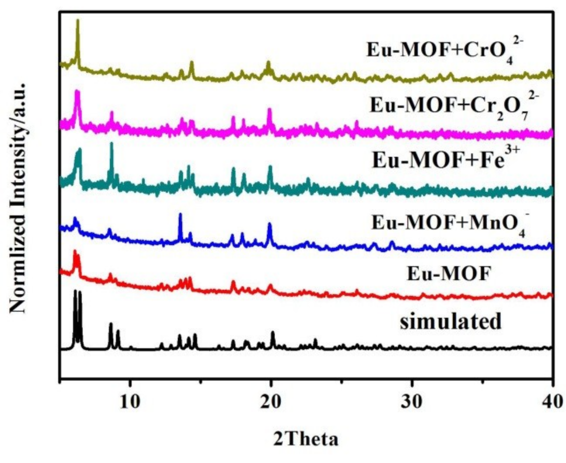


Fig.S12 PXRD patterns of complexe**1** in aqueous solutions of toxic substance.

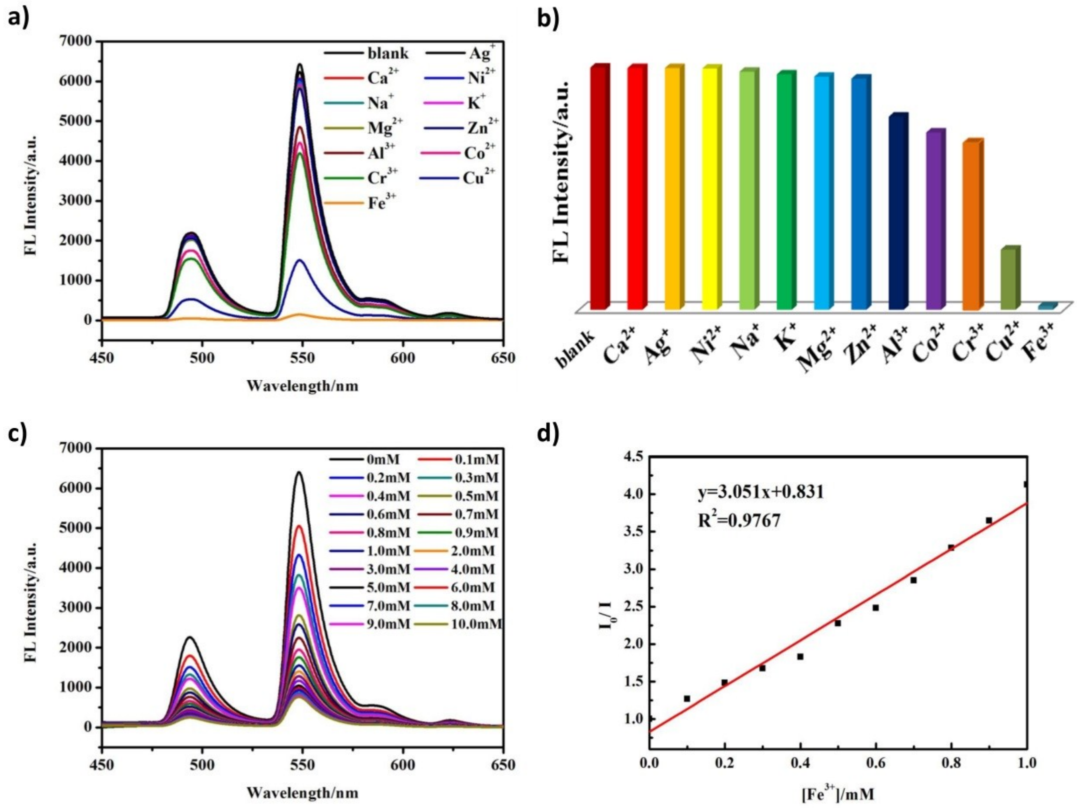


Fig.S13 (a) Luminescence intensity at 548nm of complexe**2** dispersed in the aqueous solutions of different cations upon excitation at 339nm. (b) Cations selectivity of complexe**2** (I_0 / I) in H_2O. (c) Luminescence responses of complexe**2** toward different concentrations of Fe^{3+} (0-1.0mM) in H_2O (λ_{ex} = 339 nm). (d) Stern-Volmer plot of I_0 / I versus increasing concentrations of Fe^{3+}.

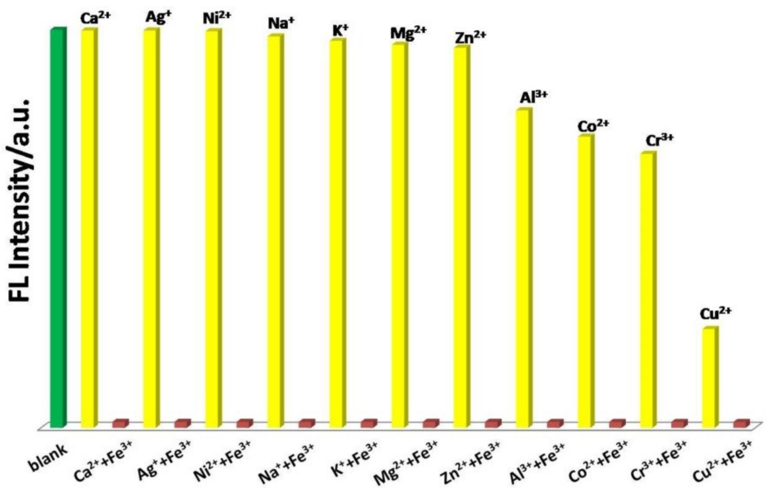


Fig.S14 Luminescence intensity of the complexe**2** dispersed in aqueous solution in the presence of different cations (yellow) or a mixture of other cations with Fe^{3+} (red).

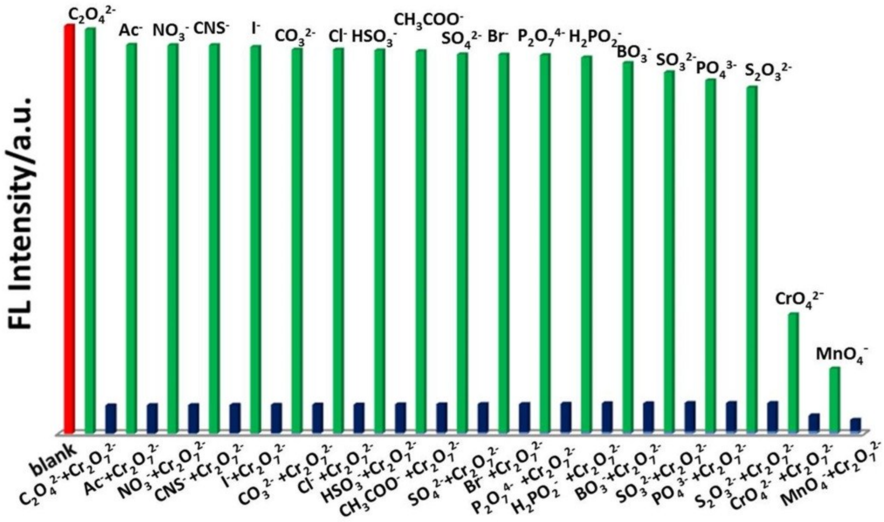


Fig.S15 Luminescence intensity of the complexe**1** dispersed in aqueous solution in the presence of different anions (green) or a mixture of other anions with $Cr_2O_7^{2-}$ (blue).

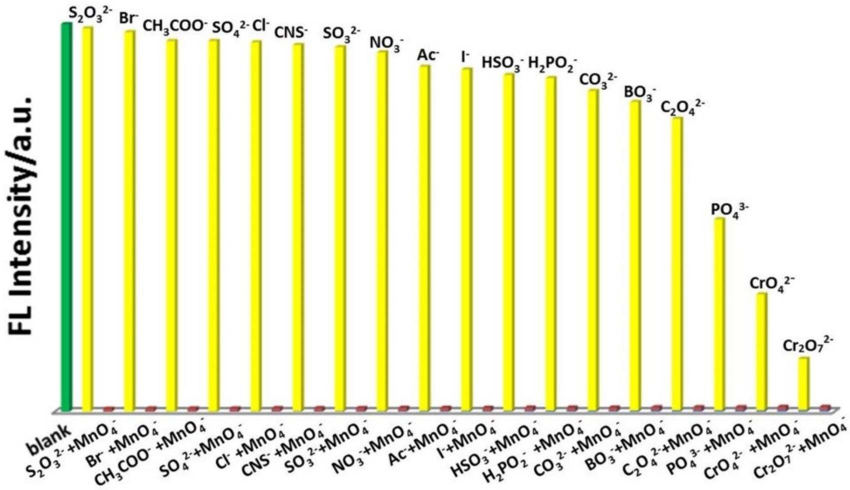


Fig.S16 Luminescence intensity of the complexe**2** dispersed in aqueous solution in the presence of different anions (yellow) or a mixture of other anions with MnO_4^- (red).

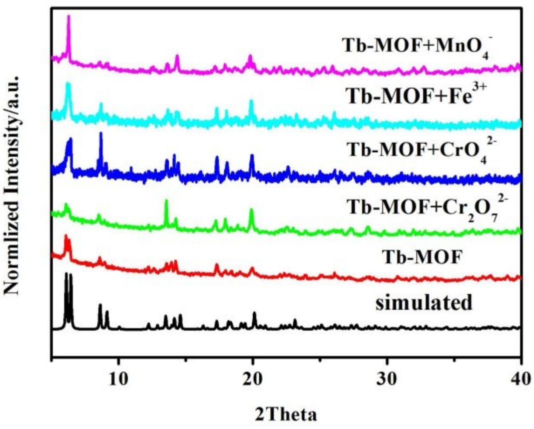


Fig.S17 PXRD patterns of complexe**2** in aqueous solutions of toxic substance.

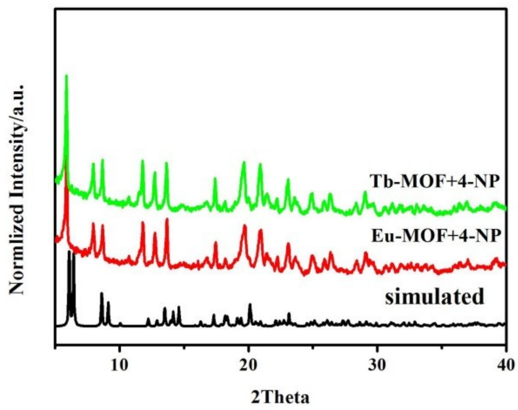


Fig.S18 PXRD patterns of complexes**1-2** in aqueous solutions of 4-NP.

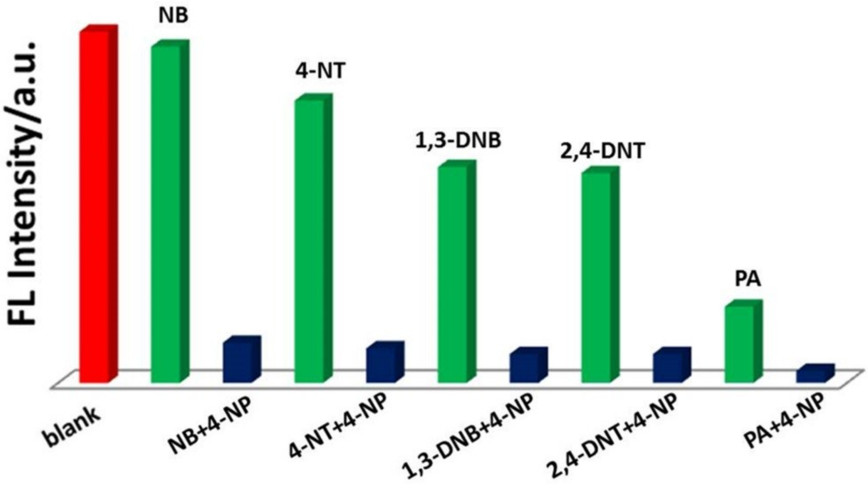


Fig.S19 Luminescence intensity of the complexe**1** dispersed in aqueous solution in the presence of different nitro aromatic compounds (green) or a mixture of other nitro aromatic compounds with 4-NP (blue).

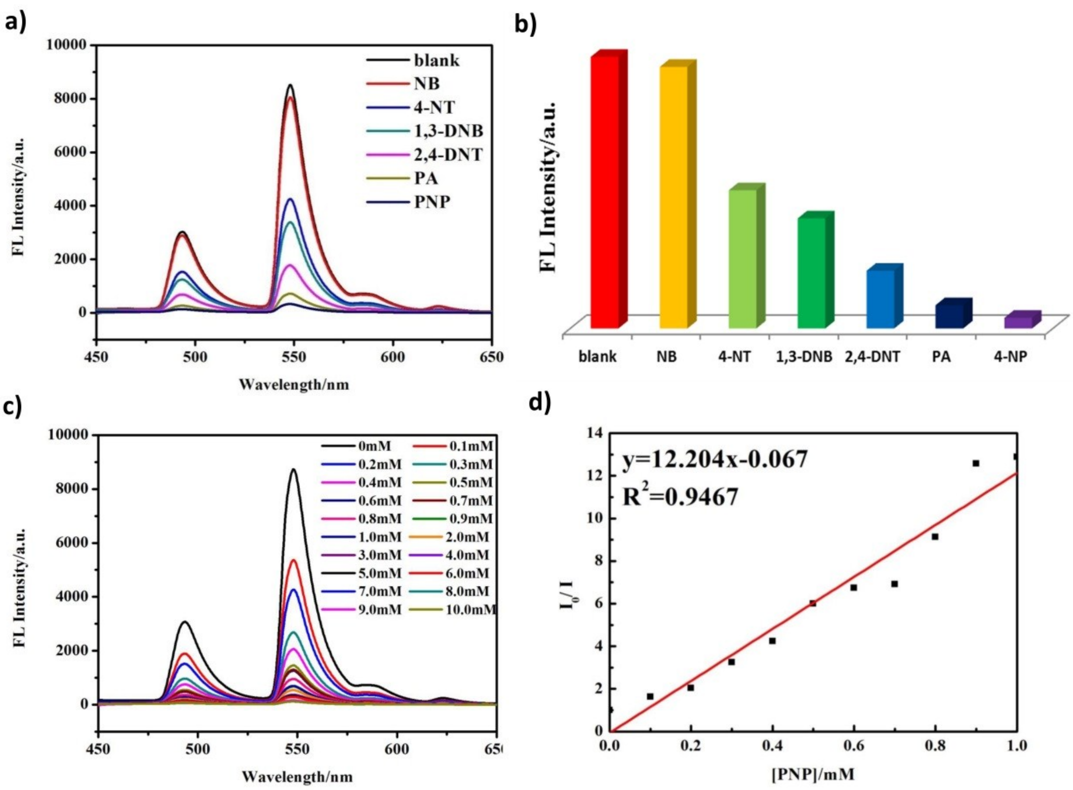


Fig.S20 (a) Luminescence intensity at 548nm of complexe**2** dispersed in the aqueous solutions of different nitro aromatic compounds upon excitation at 339nm. (b) Nitro aromatic compounds selectivity of complexe**2** (I_0 / I) in H_2O. (c) Luminescence responses of complexe**2** toward different concentrations of 4-NP (0-1.0Mm) in H_2O (λ_{ex} = 339nm). (d) Stern-Volmer plot of I_0 / I versus increasing concentrations of 4-NP.

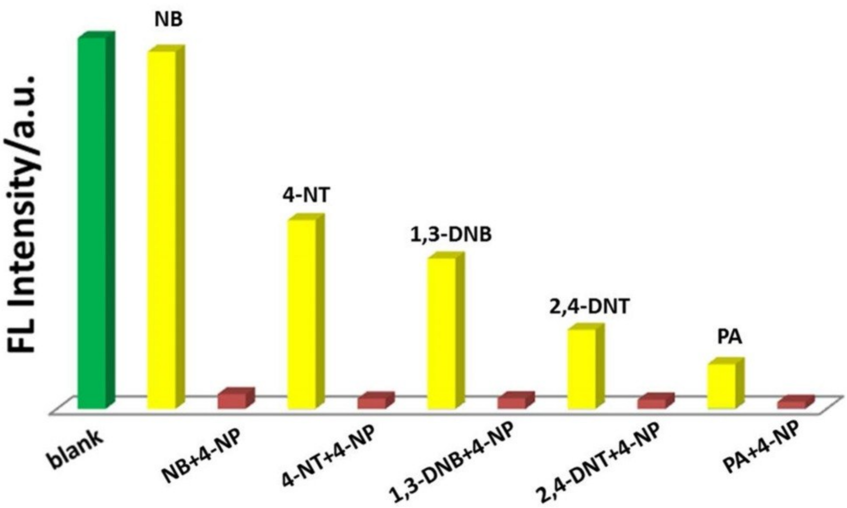


Fig.S21 Luminescence intensity of the complexe**2** dispersed in aqueous solution in the presence of different nitro aromatic compounds (yellow) or a mixture of other nitro aromatic compounds with 4-NP (red).

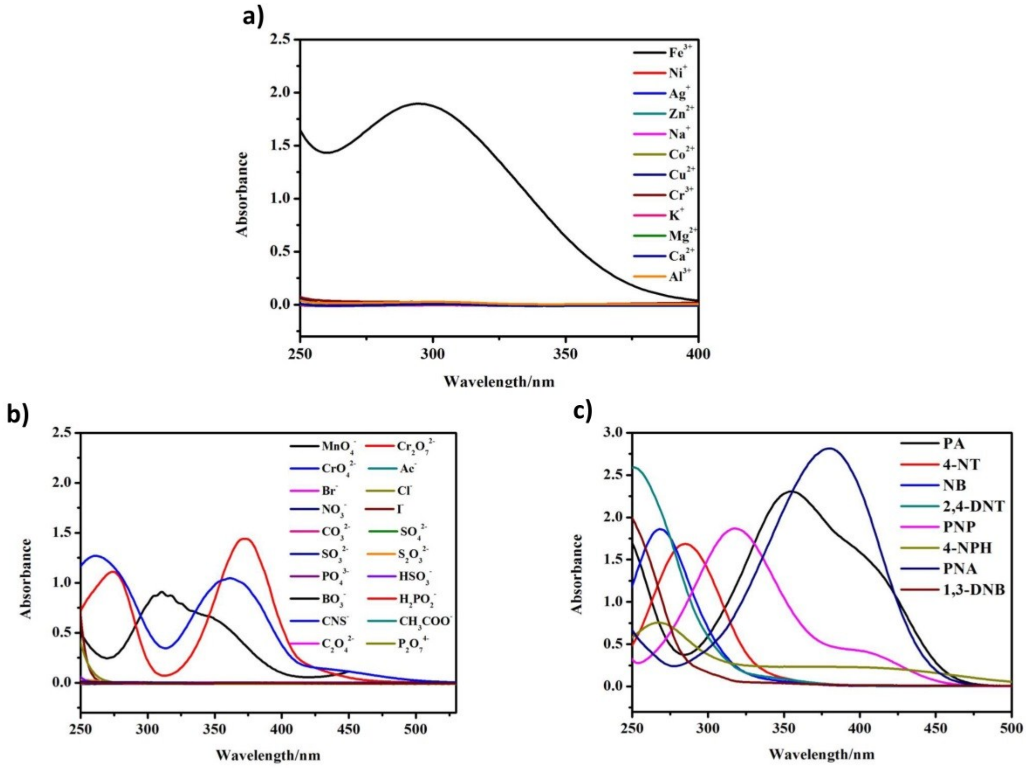


Fig.S22 (a) UV-Vis spectra of different cations in aqueous solutions. (b) UV-Vis spectra of different anions in aqueous solutions. (c) UV-Vis spectra of different nitro aromatic compounds in aqueous solutions.

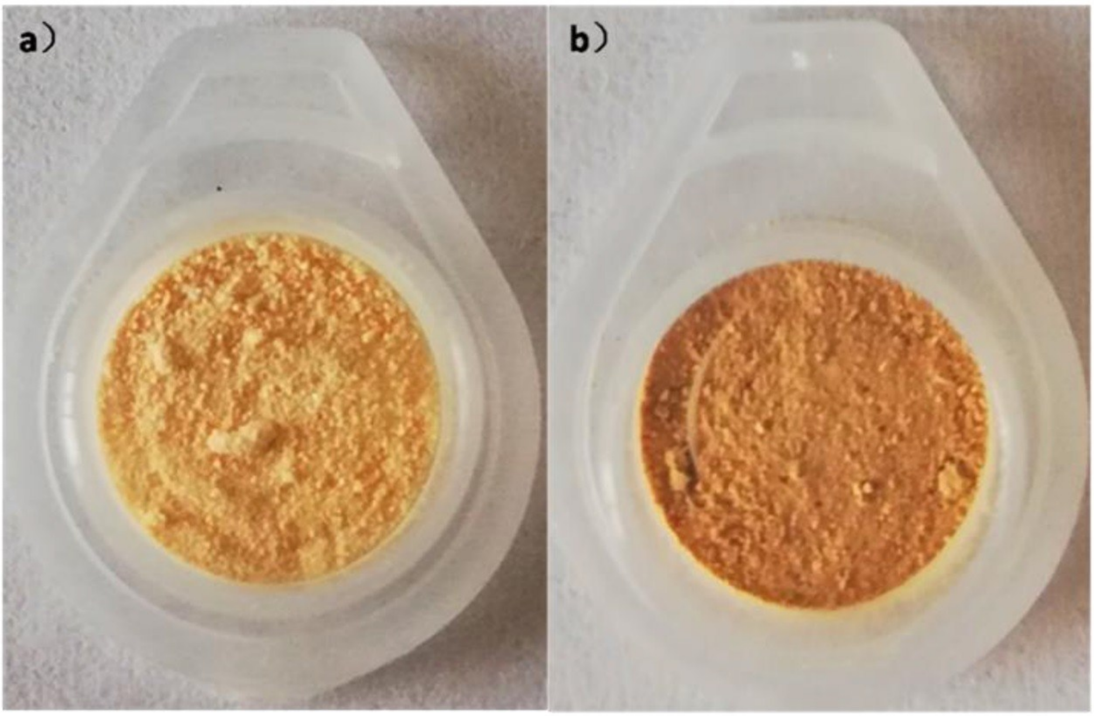


Fig.S23 A solid sample immersed in an aqueous solution of MnO_4^- from light yellow to brown.

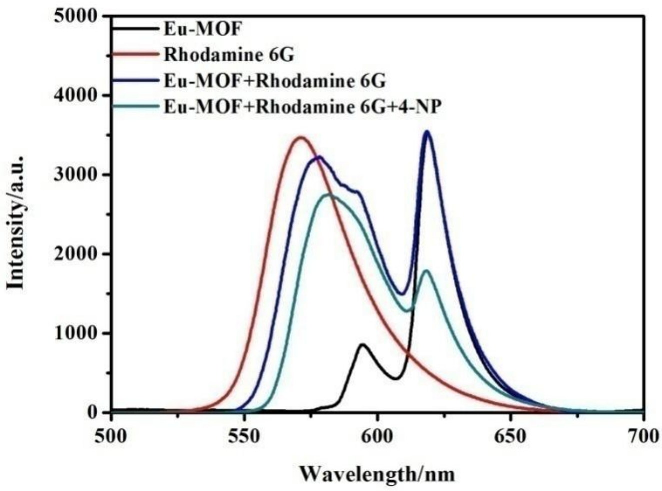


Fig.S24 Steady-state emission spectra of complexe**1** (1mg / 2mL), Rhodamine6G (3μM) and the mixture of complexe**1** and Rhodamine6G before and after addition of 4-NP (1×10^{-3}mol/L) in DMAC, respectively.

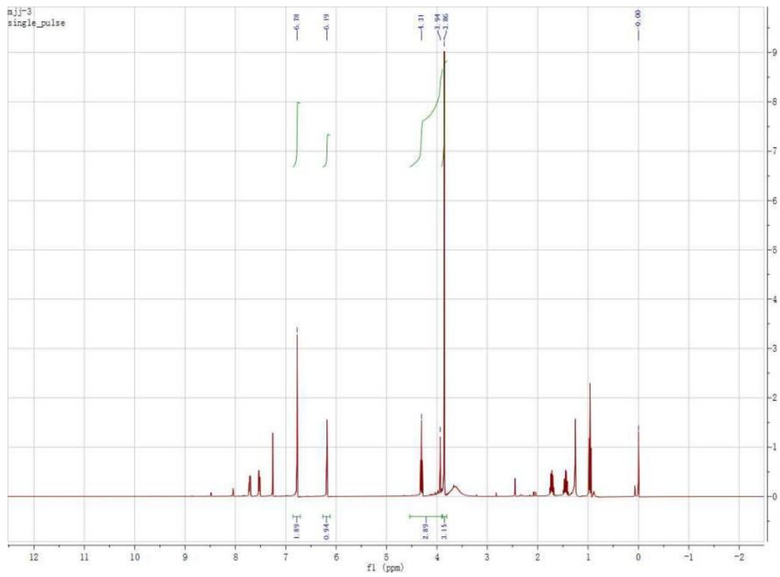


Fig.S25 ^{1}HNMR spectrum of **1** in chloroform-d ($CDCl_3$-d).

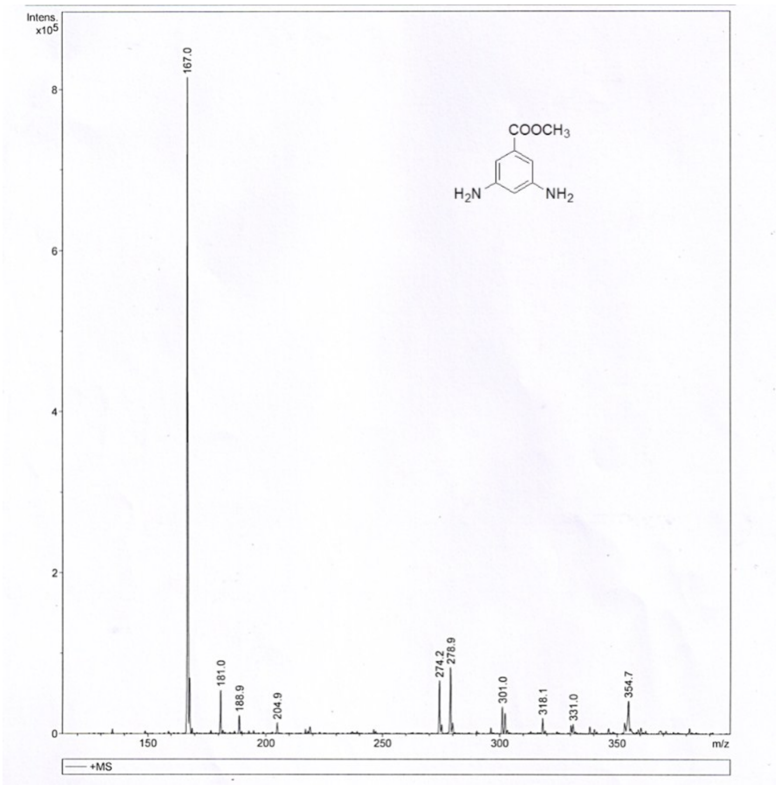


Fig.S26 ESI-MS of **1**.

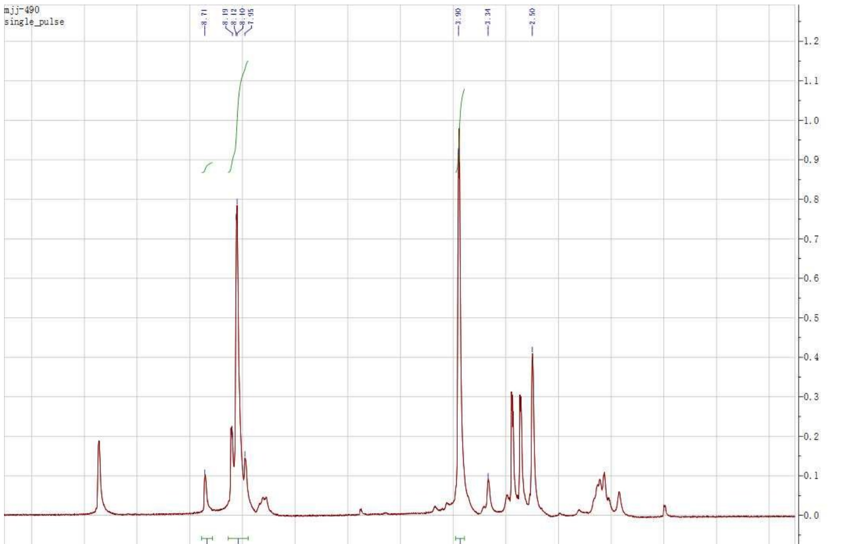


Fig.S27 ^{1}HNMR spectrum of **2** in DMSO-d_6.

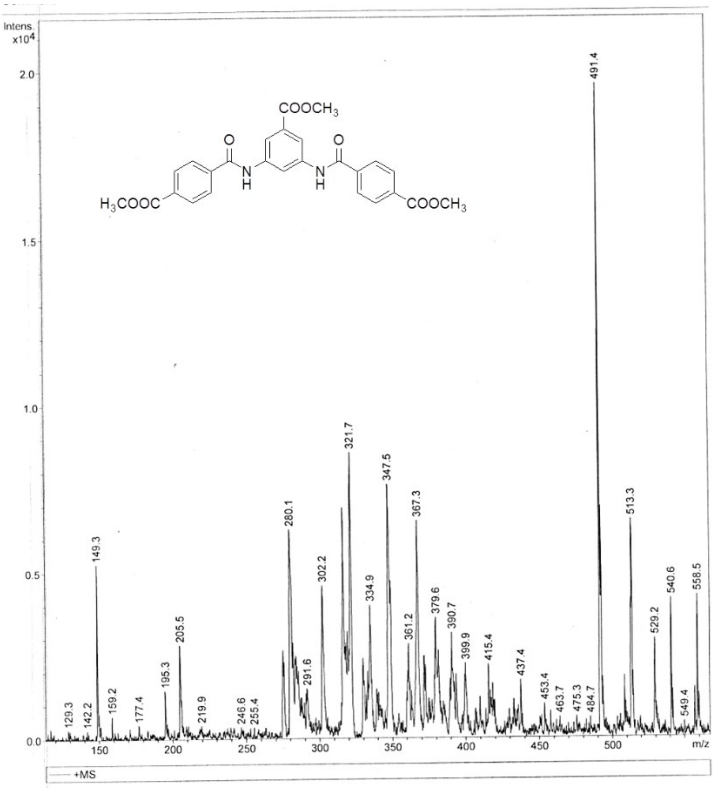


Fig.S28 ESI-MS of **2**.

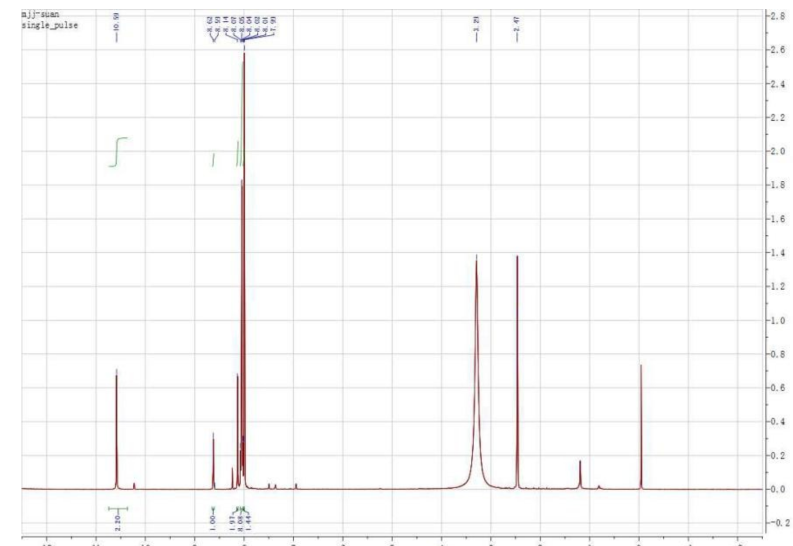


Fig.S29 [1]HNMR spectrum of $\mathbf{H_3L}$ in DMSO-d_6.

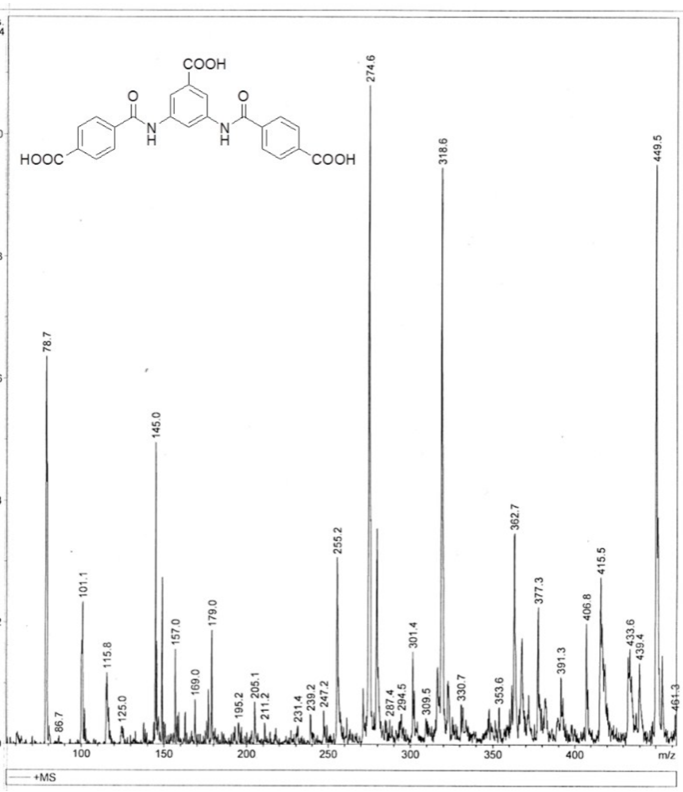


Fig.S30 ESI-MS of **H_3L**.

Table S2. Luminescence lifetime and quantum yield of complexes**1–2** and their analogues.

materials	λ_{ex} /λ_{em}(nm)	τ (μs)	ϕ(%)
Ligand	353/464		
Complexe**1** (solid)	394/619	τ_1=341.46	2.12
Complexe**2** (solid)	339/548	τ_1=281.29, τ_2=721.97	11.61
Complexe**1** (1mg/2mL)	394/619	τ_1=1121.91	
Rhodamine6G (3 μM in DMAC)	330/572	τ_1=6.77×10^{-3}	

Table S3. Luminescence lifetime of complexes**1-2** before and after detection Fe^{3+}, $Cr_2O_7^{2-}$, MnO_4^- and 4-NP.

materials	λ_{ex} /λ_{em}(nm)	τ (μs)
Complexe**1** (1mg/2mL)	394/619	τ_1=1121.91
Complexe**1** (1mg/2mL) + Fe^{3+}	394/619	τ_1=1087.74
Complexe**1** (1mg/2mL) + $Cr_2O_7^{2-}$	394/619	τ_1=1121.23
Complexe**1** (1mg/2mL) + 4-NP	394/619	τ_1=1099.07
Complexe**2** (1mg/2mL)	339/548	τ_1=1155.23
Complexe**2** (1mg/2mL) + Fe^{3+}	339/548	τ_1=1153.14
Complexe**2** (1mg/2mL) + MnO_4^-	339/548	τ_1=1139.68
Complexe**2** (1mg/2mL) + 4-NP	339/548	τ_1=1132.39

Table S4. Summary of literature data on sensing Fe^{3+} ions by various MOF based or related materials.

MOFs and related materials	Analyte	K_{sv} (M^{-1})	Detection Limit (mol/L)	Ref
$\{[Eu_2L_{1.5}(H_2O)_2EtOH]\cdot DMF\}_n$	Fe^{3+}	2942	1×10^{-5}	1
$Y_{0.99}Eu_{0.01}$/Ad/BPDC	Fe^{3+}	3400	-	2
$[La(TPT)(DMSO)_2]\cdot H_2O$	Fe^{3+}	1.36×10^{4}	-	3
Probes **L3**	Fe^{3+}	3310	-	4
PF5	Fe^{3+}	-	9×10^{-7}	5
$\{[Tb(TATAB)\ (H_2O)_2]\cdot NMP\cdot H_2O\}_n$	Fe^{3+}	3667	1×10^{-6}	7
$[Tb(TAIP)(DMF)_2]$	Fe^{3+}	8860	7×10^{-7}	8
$[Gd_6(L)_3(HL)_2(H_2O)_{10}]18\cdot H_2O\cdot x$(solvent)	Fe^{3+}	7.98×10^{4}	1.67ppm	9
$[Pb(BPDP)]$ $[Pb_3(BPDP)_{1.5}(OOCC_6H_4COOH)_3]$	Fe^{3+}	2.2×10^{4} 2.23×10^{4}	-	10
$\{[Cd(5\text{-asba})(bimb)]\}_n$	Fe^{3+}	1.78×10^{4}	1ppm	11
534-MOF-Tb	Fe^{3+}	5510	1.3×10^{-4}	12
Pb_3O_2L	Fe^{3+}	7.8×10^{3}	7.85×10^{-6}	13
$[Ln(ppda)(bdc)_{0.5}(C_2H_5OH)(H_2O)]_n$	Fe^{3+}	2.1×10^{4}	1×10^{-5}	15
$\{[Zn_3(mtrb)_3(btc)_2]\cdot 3H_2O\}_n$	Fe^{3+}	6500	1.78×10^{-6}	16
$\{[Zn_3(L)(OH)(H_2O)_5]\cdot NMP\cdot 2H_2O\}_n$	Fe^{3+}	4.7×10^{4}	1.98×10^{-3}	17
Eu^{3+}@MIL-**53**-COOH (Al)	Fe^{3+}	5120	5×10^{-5}	19
$\{[Cd(L)(4,4\text{-bpy})]\cdot DMF\cdot H_2O\}_n$ $\{[Cd_2(L)_2(bpe)_2]\cdot 3DMF\cdot 2.5H_2O\}_n$ $\{[Cd(L)(bibp)]\cdot 2DMF\}_n$	Fe^{3+}	2.56×10^{4} 1.74×10^{4} 3.39×10^{4}	2.32×10^{-6} 0.61×10^{-6} 1.24×10^{-6}	25
$[Eu(HL)_{1.5}(H_2O)(DMF)]\cdot 2H_2O$ $[Tb(HL)_{1.5}(H_2O)(DMF)]\cdot 2H_2O$	Fe^{3+}	1×10^{4} 9920	1.03×10^{-6} 1.04×10^{-6}	26
$\{[Eu(L)(HCOO)]\cdot H_2O\}_n$	Fe^{3+}	7461	1×10^{-9}	27
$(\{Eu(L)(H_2O)(DMA)\}_n$ $(\{Tb(L)(H_2O)(DMA)\}_n$	Fe^{3+}	2.03×10^{4} 2.11×10^{4}	1.41×10^{-6} 1.01×10^{-6}	28
$[Cd(p\text{-CNPhHIDC})(4,4'\text{-bipy})_{0.5}]_n$ $[Zn(p\text{-CNPhHIDC})(4,4'\text{-bipy})]_n$	Fe^{3+}	1990 1370	5×10^{-3}	30
$[Eu(L)(H_2O)]\cdot 1.5H_2O$	Fe^{3+}	66070	0.87×10^{-6}	32
$[Zn(PrOip)(bpp)(H_2O)]_n$ $\{[Zn(^{n}BuOip)(bpp)]\cdot 2H_2O\}_n$ $\{[Zn(^{i}BuOip)(bpp)]\cdot 2H_2O\}_n$	Fe^{3+}	4404 1474 1714	6.676×10^{-5} 5.442×10^{-5} 1.773×10^{-5}	35
$[Zn_2(L)_2(TPA)]\cdot 2H_2O$	Fe^{3+}	6400	3.84×10^{-6}	36
$[Tb_4L_4(NO_3)_2(Piv)_2]\cdot 2CH_3OH$	Fe^{3+}	1.86×10^{4}	1×10^{-5}	37
$[Eu(IMS1)_2\ Cl\cdot 4H_2O$	Fe^{3+}	5873.4	2.3×10^{-5}	38
$\{[Zn(L)_{0.5}(bimb)]\cdot 2H_2O\cdot 0.5(CH_3)_2NH\}_n$ $\{[Zn(L)_{0.5}(bimmb)]\cdot 2H_2O\}_n$ $\{[Zn(L)_{0.5}(btdpe)]\cdot H_2O\}_n$ $[Zn(L)_{0.5}(bidpe)]_n$	Fe^{3+}	6.28×10^{4} 4.07×10^{4} 5.1×10^{4} 4.67×10^{4}	0.48×10^{-6} 0.74×10^{-6} 0.59×10^{-6} 0.64×10^{-6}	41
$\{Zn_2(NO_3)_2(4,4'\text{-bpy})_2(TBA)\}$	Fe^{3+}	7×10^{4}	7.18×10^{-6}	42

Table S5. Summary of literature data on sensing $Cr_2O_7^{2-}$ ions by various MOF based or related materials.

MOFs and related materials	Analyte	K_{sv}(M^{-1})	Detection Limit (mol/L)	Ref
$\{[Eu_2L_{1.5}(H_2O)_2EtOH]\cdot DMF\}_n$	$Cr_2O_7^{2-}$	1526	1×10^{-5}	1
$Y_{0.99}Eu_{0.01}$/Ad/BPDC	$Cr_2O_7^{2-}$	7200	-	6
$\{[Tb(TATAB)\ (H_2O)_2]\cdot NMP\cdot H_2O\}_n$	$Cr_2O_7^{2-}$	11106	5×10^{-6}	7
534-MOF-Tb	$Cr_2O_7^{2-}$	1.37×10^{4}	1.4×10^{-4}	12
$[Eu_2(H_2O)(DCPA)_3]_n$	$Cr_2O_7^{2-}$	8700	-	14
$[Ln(ppda)(bdc)_{0.5}(C_2H_5OH)(H_2O)]_n$	$Cr_2O_7^{2-}$	4030	1×10^{-3}	15
$\{[Zn_3(mtrb)_3(btc)_2]\cdot 3H_2O\}_n$	$Cr_2O_7^{2-}$	4620	2.83×10^{-6}	16
$\{[Zn_3(L)(OH)(H_2O)_5]\cdot NMP\cdot 2H_2O\}_n$	$Cr_2O_7^{2-}$	6.6×10^{4}	1.19×10^{-3}	17
$[Zn(L)(H_2O)]\cdot H_2O$	$Cr_2O_7^{2-}$	2.07×10^{4}	3.53×10^{-6}	21
$[Cd(TIPA)_2(ClO_4^-)_2]\cdot(DMF)_3(H_2O)$	$Cr_2O_7^{2-}$	7.15×10^{4}	8ppb	24
$\{[Cd(L)(4,4\text{-}bpy)]\cdot DMF\cdot H_2O\}_n$		2830	7.1×10^{-6}	
$\{[Cd_2(L)_2(bpe)_2]\cdot 3DMF\cdot 2.5H_2O\}_n$	$Cr_2O_7^{2-}$	3700	1.65×10^{-6}	25
$\{[Cd(L)(bibp)]\cdot 2DMF\}_n$`		6150	5.3×10^{-6}	
$\{[Eu(L)(HCOO)]\cdot H_2O\}_n$	$Cr_2O_7^{2-}$	31048	2×10^{-9}	27
$\{[Eu_2Na(Hpddb)(pddb)_2(CH_3COO)_2]\cdot 2.5(DMA)\}_n$	$Cr_2O_7^{2-}$	6.45×10^{3}	5.35×10^{-6}	29
$[Cd(L)_2(H_2O)_2]_n$	$Cr_2O_7^{2-}$	5.1×10^{4}	3.41×10^{-5}	31
$[Eu(L)(H_2O)]\cdot 1.5H_2O$	$Cr_2O_7^{2-}$	5.18×10^{4}	1.25×10^{-6}	32
$[Cd(TPA)(DIB)]_n$	$Cr_2O_7^{2-}$	3.6×10^{4}	1.2×10^{-6}	33
$[Cd(TPA)(BIYB)]_n$		1.4×10^{7}	4.1×10^{-7}	
$\{[Eu\ (bpydb)_3(HCOO)(OH)_2(DMF)]\ 3DMF\cdot 2H_2O\}_n$	$Cr_2O_7^{2-}$	1.33×10^{4}	5×10^{-7}	34
$[Zn(PrOip)(bpp)(H_2O)]_n$		2237	0.1314×10^{-5}	
$\{[Zn(^{n}BuOip)(bpp)]\ \cdot 2H_2O\}_n$	$Cr_2O_7^{2-}$	4512	1.778×10^{-5}	35
$\{[Zn(^{i}BuOip)(bpp)]\ \cdot 2H_2O\}_n$		1813	1.676×10^{-5}	
$[Zn_2(L)_2(TPA)]\cdot 2H_2O$	$Cr_2O_7^{2-}$	6050	3.8×10^{-6}	36
$[Tb_4L_4(NO_3)_2(Piv)_2]\cdot 2CH_3OH$	$Cr_2O_7^{2-}$	7.44×10^{3}	2.7×10^{-5}	37
$[(CH_3)_2NH_2][In(TNB)_{4/3}]\cdot(2DMF)(3H_2O)$	$Cr_2O_7^{2-}$	5.33×10^{4}	4.5×10^{-5}	40
$\{[Zn(L)_{0.5}(bimb)]\cdot 2H_2O\cdot 0.5(CH_3)_2NH\}_n$		5.68×10^{4}	0.53×10^{-6}	
$\{[Zn(L)_{0.5}(bimmb)]\cdot 2H_2O\}_n$	$Cr_2O_7^{2-}$	7.35×10^{4}	0.41×10^{-6}	41
$\{[Zn(L)_{0.5}(btdpe)]\cdot H_2O\}_n$		5.55×10^{4}	0.54×10^{-6}	
$[Zn(L)_{0.5}(bidpe)]_n$		6.2×10^{4}	0.48×10^{-6}	

Table S6. Summary of literature data on sensing MnO_4^- ions by various MOF based or related materials.

MOFs and related materials	Analyte	K_{sv}(M^{-1})	Detection Limit (mol/L)	Ref
[Pb(BPDP)] $[Pb_3(BPDP)_{1.5}(OOCC_6H_4COOH)_3]$	MnO_4^-	9.71×10^4 1.1×10^4	-	10
534-MOF-Tb	MnO_4^-	6.63×10^4	3.4×10^{-4}	12
$\{[Zn_3(L)(OH)(H_2O)_5]\cdot NMP\cdot 2H_2O\}_n$	MnO_4^-	1.1×10^4	1.81×10^{-3}	17
CDs@MOF(Eu)	MnO_4^-	3.64×10^4	6.8×10^{-5}	20
$\{[Eu_2Na(Hpddb)(pddb)_2(CH_3COO)_2]\cdot 2.5(DMA)\}_n$	MnO_4^-	2840	2.99×10^{-6}	29
$[Cd(L)_2(H_2O)_2]_n$	MnO_4^-	2.2×10^4	1.73×10^{-4}	31
$\{[Eu(bpydb)_3(HCOO)(OH)_2(DMF)]$ $3DMF\cdot 2H_2O\}_n$	MnO_4^-	2.45×10^4	1×10^{-7}	34

Table S7. Summary of literature data on sensing 4-NP by various MOF based or related materials.

MOFs and related materials	Analyte	K_{sv}(M^{-1})	Detection Limit (mol/L)	Ref
$\{[Tb(TATAB)(H_2O)_2]\cdot NMP\cdot H_2O\}_n$	4-NP	3.7×10^5	140ppm	7
$[Tb(TAIP)(DMF)_2]$	4-NP	3.35×10^4	6×10^{-7}	8
$[Gd_6(L)_3(HL)_2(H_2O)_{10}]18\cdot H_2O\cdot x(solvent)$	4-NP	8.4×10^3	1.7ppm	9
[Pb(BPDP)] $[Pb_3(BPDP)_{1.5}(OOCC_6H_4COOH)_3]$	4-NP	6.45×10^4 4.2×10^4	6×10^{-4} 7×10^{-4}	10
$[Er_2(C_{10}H_4O_4S_2)_3(H_2O)_6]_n$	4-NP	1179	-	18
$[Zn(L)(H_2O)]\cdot H_2O$	4-NP	1.25×10^4	3.74×10^{-6}	21
$[NaEu_2(TATAB)_2(DMF)_3]\cdot OH$	4-NP	$0.68ppm^{-1}$	80ppm	22
$[Zn_2(1,4\text{-}bdc)(1,4\text{-}Hbdc)_2(NI\text{-}bpy\text{-}34)_2]$ $[Zn_2(2,6\text{-}ndc)(2,6\text{-}Hndc)_2(NI\text{-}bpy\text{-}34)_2]\cdot H_2O$ $[Zn(Hbtc)(NI\text{-}bpy\text{-}34)(H_2O)]\cdot H_2O$	4-NP	1000 4230 2380	13.25×10^{-6} 2.91×10^{-6} 28.18×10^{-6}	23
$\{[Eu(L)(HCOO)]\cdot H_2O\}_n$	4-NP	13784	3×10^{-9}	27
$[Eu(L)(H_2O)]\cdot 1.5H_2O$	4-NP	75130	0.92×10^{-6}	32
$[In_3O(ADBA)_3(H_2O)_3](NO_3)\cdot(H_2O)_6$	4-NP	5.1×10^4	-	39

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